REMARKS/ARGUMENTS

This is meant to be a complete response to the Office Action mailed July 28, 2004. In the Office Action, the Examiner rejected Applicant's claims 1-56 under 35 U.S.C. 103(a) as being obvious over Weder (US 5,111,613) in view of the English abstract of Japanese Patent No. 47029902. Applicant respectfully traverses the rejection for the reasons stated hereinbelow.

Independent claims 1, 9, 15, 20 and 27 of the subject application, as well as claims 2, 10-14, 16-19 and 28-32 which depend therefrom, recite methods for providing a decorative cover for a flower pot by providing a sheet of polymeric material having a texture or appearance simulating the texture or appearance of paper on at least a portion of one surface thereof, and **forming** the sheet of polymeric material **about the outer peripheral surface of a flower pot**. Independent claims 3, 33, 39, 44 and 51, as well as claims 4-8, 34-38, 40-43, 45-50 and 52-56 which depend therefrom, recite methods of providing a decorative cover for a floral grouping by providing a sheet of polymeric material having a texture or appearance simulating the texture or appearance of paper on at least a portion of one surface thereof, and **wrapping** the sheet of polymeric material **about at least a portion of the floral grouping**.

Weder et al. (US 5,111,613) discloses a **preformed** flower pot or flower pot cover that is formed using a mold system. The preformed flower pot or flower pot cover of Weder et al. includes a plurality of overlapping folds that

provide structural integrity to the flower pot or flower pot cover so that it maintains its shape without the use of a flower pot or floral grouping.

The methods of the present invention, as recited by the claims of the subject application, require **forming** a sheet of material about a flower pot or **wrapping** a sheet of material about a floral grouping. Weder et al. do not teach, disclose or even suggest these steps, as the flower pot or flower pot cover of Weder et al. is formed prior to its use as a flower pot or flower pot cover.

In addition, Weder et al. do not teach, disclose or even suggest providing a sheet of material utilized to provide a decorative cover for a flower pot or floral grouping with a texture or appearance simulating the texture or appearance of paper.

The Examiner has recognized the deficiencies of the Weder et al. reference and has attempted to supply such deficiencies with the teachings of the English abstract of the Japanese Patent (47029902).

The English abstract of the Japanese Patent discloses a paper-like sheet with a colored pattern formed by embossing a molten thermoplastic polymer. However, the English abstract does not disclose, teach or even suggest any uses for the paper-like sheet taught therein. Therefore, there is no suggestion or motivation in either the Weder et al. patent or the English abstract of the Japanese Patent to combine the teachings of such references, and even if there were such suggestion or motivation, the combination of Weder et al. and the

English abstract of the Japanese patent would still not arrive at decorative cover for a flower pot or floral grouping, as recited by the claims of the subject application. In addition, the Japanese Patent does not teach, disclose or even suggest providing the sheet taught therein with additional patterns, such as printed and/or embossed patterns in addition to a texture or appearance simulating the texture or appearance of paper, as recited in claims 4-7, 10-13, 16-19, 23-26, 29-32, 34-37, 40-43, 47-50, and 53-56 of the subject application.

Attached hereto as Exhibit A is a copy of a translation of the complete Japanese Patent No. SHO 49[1974]-29902. The translation discloses a **paper-shaped or sheet-shaped structural object** having a colored pattern without requiring a printing step. Such sheet-shaped structural object is a laminate of two mesh-shaped sheet-like objects having numerous non-continuous cracks along one direction thereof, wherein the two objects are overlapped and aligned with respect to the direction of the cracks. This provides a sheet having a certain strength in both the longitudinal and lateral directions. During the process of laminating the two sheet-like objects, the color of the inner layer floats up to the surface and provides the colored pattern without a printing step. The Example in the Japanese Patent discloses a paper-shaped structural object that has a brown color for the protrusions of the surface pattern and wood-like black color for the recessions.

However, the entire Japanese Patent does not disclose, teach or even suggest any uses for the paper-shaped object taught therein. Therefore, there is no suggestion or motivation in either the Weder et al. patent or the Japanese Patent to combine the teachings of such references. In addition, the combination of the two references would still not arrive at a decorative cover for a flower pot or floral grouping, as recited in the claims of the subject application. Further, the Japanese Patent actually teaches against providing a printed pattern to the object taught therein, and therefore cannot be combined with any references to arrive at the invention recited in claims 4-7, 10-13, 16-19, 23-26, 29-32, 34-37, 40-43, 47-50, and 53-56 of the subject application.

Therefore, Applicant respectfully submits that the present invention, as recited in Applicant's claims 1-56, as now amended, is non-obvious over the combination of Weder et al. and Japanese Patent No. SHO 49[1974]-29902. Applicant respectfully requests reconsideration and withdrawal of the 35 U.S.C. 103(a) rejection of claims 1-56 as now pending.

Further, Applicant respectfully submits that claims 1-56 are now in a condition for allowance. Favorable action is respectfully solicited.

CONCLUSION

This is meant to be a complete response to the Office Action mailed July 28, 2004. Should the Examiner have any questions regarding this amendment or the remarks contained therein, Applicant's representative would welcome the opportunity to discuss the same with the Examiner.

Respectfully submitted,

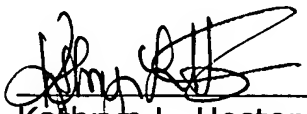

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EXHIBIT "A"

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PATENT JOURNAL
KOKOKU PATENT APPLICATION No. SHO 49[1974]-29902

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(52)Japanese Cl.
//see orig. p. 1//

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(54)TITLE: Method for manufacturing colored paper-like structural object having colored pattern effect

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Amendments: There are no amendments to this patent.

Claim

A method for manufacturing a type of colored paper-like structural object characterized by the following facts: a melt polymer of a thermoplastic resin containing a foaming substance is extruded from a slit die; while being cooled, it is drawn to obtain a colored sheet-like fiber structural object having numerous non-continuous cracks along one direction; two or more pieces of said colored sheet-like fiber structural object are overlapped such that they are aligned with respect to the direction of said cracks; the laminate is then drawn in the direction perpendicular to said crack direction to form mesh-shaped sheet-like object (1); then, the surface of said mesh-shaped sheet-like object is laminated with mesh-shaped sheet-like object (2) in white color or light color, having a softening point equal to or lower than that of said mesh-shaped sheet-like object (1) and prepared using the same method as that for said mesh-shaped sheet-like object (1), with their fiber directions in agreement with each other; then, pressure bonding is performed at a temperature lower than the softening point of said mesh-shaped sheet-like object (2), while the layer of said mesh-shaped sheet-like object (2) is pressed for bonding with an emboss plate or an emboss roll so that it is partially converted to film form at the protrusion portions of the pattern mold.

Brief explanation of figures

Figure 1 is a diagram illustrating an example of the sheet-shaped structural object having numerous non-continuous cracks along one direction prepared in the method of the present invention. Figure 2 is a diagram illustrating the mesh-shaped sheet-like object prepared by overlapping two or more pieces of said sheet-shaped structural object with said crack directions in agreement with each other, followed by drawing in the direction perpendicular to said crack direction. Figure 3 is a diagram illustrating an example of the paper-shaped structural object having colored pattern manufactured using the method of the present invention. Figure 4 is a diagram illustrating the contents of the method of the present invention.

Detailed explanation of the invention

The present invention pertains to a novel method for manufacturing a paper-shaped structural object having a colored pattern. The purpose of the present invention is to facilitate manufacturing of the paper-shaped structural object having nay colored pattern without going through the stage of printing.

In the prior art, the following scheme is well known: a melt polymer containing a foaming substance is extruded from a die having a slit, and draft is applied on it, and the sheet is wound up, so that a structural object having numerous non-continuous cracks with fiber-like structure between cracks is obtained (British Patents No.1165934, and Japanese Kokoku Patent Application No. Sho 43[1968]-25960).

However, for said sheet-shaped structural object, although it is not broken when pulled with a rather large force in the crack direction, when it is pulled with a small force in the direction nearly perpendicular to said crack direction, it expands to become a mesh-shaped structural object with a huge proportion of the spacing, and the mesh-shaped object is then broken. Consequently, said sheet-shaped structural object cannot be used as it is to substitute paper sheets that are required to have certain strength in both the longitudinal and lateral directions. This is undesired.

The present inventors have found the following facts: when a light colored mesh-shaped sheet-like object is laminated on the surface of a dark colored mesh-shaped sheet-like object, and they are pressed to bond, the mesh-shaped sheet-like object on the outer surface is partially converted to a film with the protrusion portions of the pattern mold. As a result, the color of the colored mesh-shaped sheet-like object as the inner layer floats up to the surface. Consequently, it is possible to manufacture a paper-shaped structural object having any colored pattern and with satisfactory strength without going through the step of printing operation. As a result, the present invention was reached.

That is, the present invention provides method for manufacturing a type of colored paper-like structural object characterized by the following facts: a melt polymer of a thermoplastic resin containing a foaming substance is extruded from a slit die; while being cooled, it is drawn to obtain a colored sheet-like fiber structural object having numerous non-continuous cracks along one direction; two or more pieces of said colored sheet-like fiber structural object are overlapped such that they are aligned with respect to the direction of said cracks; the laminate is then drawn in the direction perpendicular to said crack direction to form mesh-shaped sheet-like object (1); then, the surface of said mesh-shaped sheet-like object is laminated with mesh-shaped sheet-like object (2) in white color or light color, having a softening point equal to or lower than that of said mesh-shaped sheet-like object (1) and prepared using the same method as that for said mesh-shaped sheet-like object (1), with their fiber directions in agreement with each

other; then, pressure bonding is performed at a temperature lower than the softening point of said mesh-shaped sheet-like object (2), while the layer of said mesh-shaped sheet-like object (2) is pressed for bonding with an emboss plate or an emboss roll so that it is partially converted to film form at the protrusion portions of the pattern mold.

The sheet-shaped structural object for use in the method of the present invention is prepared from a melt polymer containing a foaming substance, and it has numerous non-continuous cracks along one direction.

Said sheet-shaped structural object can be manufactured from a thermoplastic polymer that contains a foaming substance and can be melt extruded using a conventional manufacturing method. Examples include the sheet-shaped structural objects made of polystyrene, polyethylene, polypropylene, poly-ε-caproamide, polyhexamethylene adipamide [transliteration], polyethylene terephthalate, polyethylene 2,6-naphthalate, polyvinyl chloride, polyvinylidene chloride, polycarbonate, acrylic resin, as well as copolymers and mixtures with said polymers as the principal component.

Examples of the foaming substances that can be used in the present invention include (1) gases that are substantially inactive with respect to the melt polymer, such as nitrogen, carbon dioxide, helium, etc.; (2) volatile organic liquids that are substantially to the polymer and are gasified when the polymer is melted or extruded so that the volume is increased significantly, such as butane, propane, etc.; (3) foaming agents that can generate gases substantially inactive to the polymer when the polymer is melted or extruded, such as azo-dicarboamide, para-toluene sulfonyl semi-carbazide, etc.

When the method of the present invention is adopted, it is preferred that said colored sheet-like fiber structural object used in this method have numerous non-continuous cracks along one direction with uniform shape, size and distribution state. Also, as needed by the requirement of the color pattern, both layers may have the same color or different colors to realize composite color pattern as they are laminated to form the sheet-shaped structural object.

Said sheet-shaped structural object (2) laminated as the surface layer has the same crack state as that of said colored sheet-like fiber structural object, and it is made of a white or light colored sheet-shaped structural object having a softening point equal to or lower than that o said sheet-shaped structural object.

In the following, the present invention will be explained in more detail with reference to Figure 4. First of all, two or more colored sheet-like fiber structural objects are laminated with their crack directions in agreement with each other. Then, the laminate is drawn in the direction perpendicular to the crack direction, so that said colored sheet-like fiber structural objects are smoothly and uniformly expanded to form a structurally uniform colored sheet-like fiber structural object

(1). This structural object has mutual contact area and intertwining increased significantly.

Then, on the surface of said colored mesh-shaped sheet-like object (1), white or light colored mesh-shaped sheet-like object (2) having a softening point equal to or lower than that of said colored mesh-shaped sheet-like object (1) and prepared using the same method is laminated with their fiber directions in agreement with each other. Then, the laminate is set between upper plate (4) and lower plate (3) of a pattern mold for pressure bonding at a temperature lower than the softening point of said white or light color mesh-shaped sheet-like object (2). During this process, the layer of mesh-shaped sheet-like object (2) is partially (portions ((6)) converted to a film form under the pressure, so that the color of the colored mesh-shaped sheet-like object as the inner layer floats up to the surface. As a result, it is possible to obtain a paper-shaped structural object having any color pattern without going through a step of printing.

As far as the method for laminating mesh-shaped sheet-like object (1) and mesh-shaped sheet-like object (2) is concerned, it is preferred that they be laminated before (1) and (2) have their fibers opened (that is, before expanding them in the direction perpendicular to the crack direction), followed by fiber opening.

According to the method of the present invention, the pressure applied in said pressing operation depends on the fineness of said sheet-shaped structural object, the number of the pieces of said sheet-shaped structural object, and drawing rate, etc. However, it can be determined easily in test experiments. Usually, the pressure for obtaining a good result is in the range of 40~80 kg/cm^2.

In the method of the present invention, it is necessary to perform said pressing at a temperature lower than the softening point of the polymer that forms said sheet-shaped structural object as the surface layer. If pressing is performed at a temperature higher than the softening point, the fiber-like portions of the obtained structural object are significantly flattened, so that the entire surface of the structural object become film form, and it is impossible to obtain a good paper-shaped structural object with partially colored pattern. This is undesired.

When the method of the present invention is adopted, before pressing said colored mesh-shaped sheet-like object (1) prepared by drawing to expand after overlapping of said colored sheet-shaped structural objects and said white or light color mesh-shaped sheet-like object (2) laminated on the surface of said colored mesh-shaped sheet-like object (1), as needed, the structural objects may be impregnated with a conventional binder so as to increase the strength of the finally obtained paper-shaped structural object.

According to the present invention, it is easy to obtain a paper-shaped structural object with any colored pattern without going through the step of priting.

In the following, the present invention will be explained in more detail with reference to application examples.

Application Examples

A melt polymer containing a foaming substance was extruded from a slit measuring 0.35 mm (gap) x 15 mm (width) of a die. While blown with a cooling air flow at 20°C or lower over the entire width of the melt polymer at the die outlet, the extruded [sheet] was wound up at a high draft rate.

The polymer composition, the type of the foaming substance, and the draft rate adopted in this operation are listed in Table I.

As shown in Figure 1, the observed structural object has numerous non-continuous cracks along one direction (corresponding to the drawing direction), and the portions between cracks are in fiber form. The characteristics of this sheet-shaped structural object are listed in Table I.

//see orig. p. 3// Table I.

1. Polymer compound
2. Foaming substance
3. Draft rate
4. Characteristics of sheet-shaped structural object
5. Thickness
6. Basis weight
7. Tensile strength
8. (Parallel)
9. (Straight pass [sic, perpendicular])
10. Polystyrene (99%) + talc (1%)
11. N_2 gas
12. Nearly zero
13. Notes:

1. The tensile strength was measured according to JISP-8113 (distance between chucks is 60 mm, stretching speed is 20 m/min)

2. The tensile strength (parallel) and (perpendicular) refer to the tensile strength along the crack direction of the sheet-shaped structural object and perpendicular to the crack direction, respectively.

Then, under conditions listed in Table III, a paper-shaped structural object was obtained from said sheet-shaped structural object obtained in the above.

The obtained structural object is a paper-shaped structural object that has a brown color for the protrusions of the surface pattern, and wood-like black color for the recessions as shown in Figure 3.

The characteristics are listed in Table III.

//see orig. p. 3// Table III.

1. Mesh-shaped sheet-like object
2. Manufacturing conditions
3. Characteristics of obtained structural object
4. Number of overlapped layers
5. Expanding
6. (Outer surface) brown color
7. (Inner surface) black color
8. pieces
9. Rate
10 10-fold
11. Pressure
12. temperature
13. Time (min)
14. Tensile strength
15. (Longitudinal)
16. (Lateral)
17. Thickness
18. Basis weight
19. Binder: Polyvinyl acetate based polymer
    Quantity attached: 25%